WAKE COUNTY PUBLIC SCHOOL SYSTEM

8th Grade UNIT 7 OVERVIEW: *Pythagorean Theorem*

Unit Outcomes At the end of this unit, your student should be able to:	Key Vocabulary Terms to deepen the student's understanding
✓ Explain a proof of the Pythagorean Theorem and its converse ✓ Apply the Pythagorean Theorem to find perimeter and area ✓ Apply the Pythagorean Theorem in order to find the distance between two points.	✓ Base ✓ Exponent ✓ Hypotenuse ✓ Legs ✓ Perfect Square ✓ Pythagorean Theorem ✓ Pythagorean Triple ✓ Right Angle ✓ Right Triangle ✓ Square Root
Key Standards Addressed Connections to Common Core/NC Essential Standards	**Where This Unit Fits** Connections to prior and future learning
8.NS.2 - Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., π^2). *For example, by truncating the decimal expansion of √2, show that √2 is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.* 8.EE.2 - Use square root and cube root symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$, where p is a rational number. 8.G.6 - Explain a proof of the Pythagorean Theorem and its converse. 8.G.7- Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real world and mathematical problems in two and three dimensions. 8.G.8 - Apply the Pythagorean Theorem to find the distance between two points in a coordinate system	**Coming into this unit, students should have a strong foundation in:** ✓ Solving equations with square roots ✓ Estimating irrational numbers ✓ Applying the triangle sum theorem and triangle inequality theorem **This unit builds to the following future skills and concepts:** ✓ Solving equations using the Pythagorean Theorem ✓ Using trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems
Additional Resources Materials to support understanding and enrichment	**"Learning Checks"** Questions Parents Can Use to Assess Understanding
✓ Teaching videos made by Wake County teachers ✓ WCPSS YouTube Channel – Math Playlist ✓ Pythagorean Theorem Overview ✓ Pythagorean Theorem Video ✓ Pythagorean Theorem Practice ✓ Pythagorean Theorem Practice 2	✓ What is the relationship between the sides of a right triangle? ✓ What is the significance of using right triangles in the real world? ✓ Where might you see the Pythagorean Theorem outside of school? ✓ Explain the Pythagorean Theorem